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PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Atty's Docket No. 101215-81

EXAMINER : TBA

GROUP ART UNIT : TBA

APPLICANT : Steffen Panzner et al.

APPLN. NUMBER : 10/018,617

FILED : February 21, 2002

FOR : Amphoteric Liposomes and Their Use

PRELIMINARY AMENDMENT

Hon. Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the application as follows:

IN THE SPECIFICATION

Page 1, after line 1, please insert --Background of the Invention--;

Page 3, after before line 1, please insert --Summary of the Invention--;

Page 4, before line 1, please insert --Brief Description of the Drawings

Fig. 1 - microscopic image of transfection into HeLa cells with amphoteren liposomes;\

Fig. 2 - microscopic image of transfection into CHO cells with amphoteren liposomes.

Description of the Preferred Embodiment--.

IN THE CLAIMS

Please amend the claims as follows. Claims 1, 3 and 7-13 are amended. Please cancel claims 4 and 14-19; and add new claim 20. A marked-up copy of the amended claims is attached.

1. (amended) Amphoteric liposomes having an isoelectric point of between 4 and 8, wherein the liposomes comprise

at least one positive charge carrier and at least one negative charge carrier, which is different from the positive charge carrier or

at least one amphoteric charge carrier.

3. (amended) The amphoteric liposomes of claim 1, wherein the liposomes comprise at least one amphoteric charge carrier, the amphoteric charge carrier having an isoelectric point of between 4 and 8.

7. (amended) The amphoteric liposomes of claim 1, wherein the liposomes comprise a neutral lipid, selected from the group consisting of phosphatidyl choline, phosphatidyl

ethanolamine, cholesterol, tetraether lipid, ceramide, sphigolipid and/or diacryl glycerol.

8. (amended) The amphoteric liposomes of claim 1, wherein the liposomes have an average size of between 50 and 1000 nm, preferably between 70 and 250 nm and particularly between 60 and 130 nm.

9. (amended) The amphoteric liposomes of claim 1, wherein the liposomes comprise an active ingredient.

10. (amended) The amphoteric liposomes of claim 9, wherein the active ingredient is a protein, a peptide, a DNA, an RNA, antisense nucleotide and/or a decoy nucleotide.

11. (amended) The amphoteric liposomes of claim 1, wherein at least 80 percent of the active ingredient is in the interior of the liposome.

12. (amended) A method for charging liposomes with active ingredients of claim 1, wherein a defined pH is used for the encapsulation and a second pH is used for separating the material, which has not been bound.

13. (amended) The method for charging liposomes with active ingredient of claim 1, wherein the liposomes are permeabilized and closed off at a defined pH.

20. (new) The amphoteric liposomes of claim 1, wherein the liposomes comprise at least one ampohteric charge carrier, wherein the liposomes

comprise at least one positive charge carrier and at least one negative charge carrier.

REMARKS

The above amendments were made to place the application into proper United States Patent Format.

Respectfully Submitted,

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Marked-up Copy of Amended Claims

1. (amended) Amphoteric liposomes having an isoelectric point of between 4 and 8, wherein the liposomes comprise

at least one positive charge carrier and at least one negative charge carrier, which is different from the positive charge carrier or

at least one amphoteric charge carrier~~, the liposomes having an isoelectric point of between 4 and 8~~.

2. The amphoteric liposomes of claim 1, wherein the liposomes have an isoelectric point of between 5 and 7.

3. (amended) ~~Amphoteric~~ The amphoteric liposomes of claim 1, wherein the liposomes comprise at least one amphoteric charge carrier, the amphoteric charge carrier having an isoelectric point of between 4 and 8.

~~4. The amphoteric liposomes of the preceding claim, wherein the amphoteric charge carrier has an isoelectric point of between 5 and 7.~~

5. Amphoteric liposomes, wherein the liposomes comprise at least one amphoteric charge carrier and at least one anionic and/or cationic charge carrier.

6. Amphoteric liposomes of claim 5, wherein the liposomes have an isoelectric point of between 5 and 7.

Marked-up Copy of Amended Claims

7. (amended) The amphoteric liposomes of ~~one of the claims 1 to 6~~ claim 1, wherein the liposomes comprise a neutral lipid, selected from the group consisting of phosphatidyl choline, phosphatidyl ethanolamine, cholesterol, tetraether lipid, ceramide, sphigolipid and/or diacryl glycerol.

8. (amended) The amphoteric liposomes of ~~one of the preceding claims~~ claim 1, wherein the liposomes have an average size of between 50 and 1000 nm, preferably between 70 and 250 nm and particularly between 60 and 130 nm.

9. (amended) The amphoteric liposomes of ~~one of the preceding claims~~ claim 1, wherein the liposomes comprise an active ingredient.

10. (amended) The amphoteric liposomes of ~~the preceding~~ claim 9, wherein the active ingredient is a protein, a peptide, a DNA, an RNA, antisense nucleotide and/or a decoy nucleotide.

11. (amended) The amphoteric liposomes of ~~one of the preceding claims~~ claim 1, wherein at least 80 percent of the active ingredient is in the interior of the liposome.

12. (amended) A method for charging liposomes with active ingredients of ~~claims 1 to 11~~ claim 1, wherein a defined pH is used for the encapsulation and a second pH is used for separating the material, which has not been bound.

Marked-up Copy of Amended Claims

13. (amended) The method for charging liposomes with active ingredient of ~~claims 1 to 11~~ claim 1, wherein the liposomes are permeabilized and closed off at a defined pH.

~~14. The use of liposomes of one of the claims 1 to 11 for producing nanocapsules.~~

~~15. The use of liposomes of one of the claims 1 to 11 for producing release systems in diagnostics.~~

~~16. The use of liposomes of one of the claims 1 to 11 for transporting and/or releasing active ingredients.~~

~~17. The use of liposomes of one or claims 1 to 11 as a sustained-release formulation and/or as a circulating depot.~~

~~18. The use of liposomes of one of the claims 1 to 11 for intravenous or peritoneal application.~~

~~19. The use of liposomes of one of the claims 1 to 11 as vector for the in vivo, in vitro and ex vivo transfection of cells.~~

20. (new) The amphoteric liposomes of claim 1, wherein the liposomes comprise at least one ampohteric charge carrier, wherein the liposomes comprise at least one positive charge carrier and at least one negative charge carrier.